

## **Lateral DMOS Transistor With A Self-Aligned Drain Region**

**Shekar Mallikarjunaswamy**

### ABSTRACT OF THE DISCLOSURE

An LDMOS transistor includes a body region, a source region, a conductive gate, an alignment structure and a drain region. The conductive gate is insulated from the semiconductor layer by a dielectric layer and overlies the body region. The source region is formed in the body region and is formed self-aligned to a first edge of the conductive gate. The alignment structure is formed adjacent a second edge, opposite the first edge, of the conductive gate. The alignment structure has a first edge in proximity to the second edge of the conductive gate. The drain region is formed in the semiconductor layer self-aligned to the second edge, opposite the first edge, of the alignment structure. The alignment structure can be formed in a polysilicon layer or a dielectric layer. The incorporation of the alignment structure in the LDMOS transistor enables self-aligned drain region or drain contact opening to be formed.